

# HAPPY NEW YEAR !

## GLOUCESTER COUNTY AMATEUR RADIO CLUB, W2MMD

### CLUB MEETING

WEDNESDAY, JANUARY 2, 1991; 2000 HOURS SHARP;  
AT VFW POST 2117, WOODBURY HEIGHTS, NJ.

### G.C.A.R.C. OFFICERS

PRESIDENT  
VICE PRESIDENT  
TREASURER  
REC. SECRETARY  
COR. SECRETARY

NORM CONNELLY  
MARLA BOZARTH  
CHUCK COLABRESE  
MARY ELLEN WELLS  
RICH GRAVES

WA2BMQ  
N2DWR  
WA2TML  
N2KLD  
N2ITX

### PRESIDENT'S MESSAGE

Well, I can hardly believe that another New Year is beginning. I suppose there is no stopping the hands of time. But, new beginnings are times of excitement and growth.

When I joined the Gloucester County Amateur Radio Club, I did so reluctantly because I thought it was going to be just one more club wanting more of my time and giving me little return for my investment. How wrong I was! I have met some of the most wonderful people in the world; I have upgraded my amateur license (after 22 years) through the encouragement and support of a wonderful group of club members; I have shared the joys and excitement of accompanying club members on DXpeditions; I have shared the pleasure of attending one of the best hamfests I've ever attended; I've learned some of the finer points of radio operating, especially with regard to DXing and I've rediscovered my love for Amateur Radio

Little wonder then that I'm so proud to be the newly elected President of such a great organization. I can't wait to get started. But, why should I be the only one having all of the fun! Come on! Join me in the fun and excitement! It's YOUR club, too! Let's enjoy it together! Get involved! Be a committee chairperson! Enjoy the feeling of seeing something develop the way you want it to. Got an idea for a new activity or committee? Let me know--I'll even let you head it up and do it your way! Want something changed or done differently? Tell me about it--changes are challenging and many times quite helpful. Got a suggestion for doing things better? Tell me--a good suggestion deserves a good ear! Want to serve on a committee?, give a little talk on some topic at a club meeting?--c'mon, let me hear from you. That's what makes Club membership so great--GETTING INVOLVED. Give something of yourself! That's when the fun really starts.

So, what do you say? Come on--get involved! Get in on the excitement! Let 1991 be the year when you really learn the fun and joy of giving yourself to some endeavor. Discover the great feeling of doing something for others. In the words of a well-known slogan: "BE ALL YOU CAN BE"! Join me and lets make 1991 a GREAT CLUB YEAR!

Editors note

Congratulations to the new Club Officers! I think this is going to be a very good year for the Club and Amateur Radio in general. The Club is close to breaking the 200 member mark! Check out the updated Club roster in the center of this issue. It can be pulled out without damaging the paper and kept for reference.

Al, KB2AYU

### DIRECTORS

3 YR. KEN BOZARTH KN2U  
3 YR. IRMA COLABRESE N2FNF  
2 YR. -----  
2 YR. FRANK MALINOWSKI KE2NY  
1 YR. -----  
1 YR. MIKE LIPNITZ N2FKS

### TRUSTEES

4 YR. MILT MARDER WA2FGA  
3 YR. HOWARD MARDER WA2IBZ  
2 YR. VIRGINIA MACRIE KA2ZZA  
1 YR. JIM CLARK KA2OSV

### COMMITTEE CHAIRPERSONS

ADVERTISING -----  
ARES/RACES WB2LNR  
AWARDS K2ZA  
BANQUET -----  
CHAPLAIN WA2BMQ  
CONSTITUTION WA2NPD  
CONTESTS KB2IQP  
CROSSTALK EDITOR KB2AYU  
DATA PROCESSING KB2COB  
FIELD DAY -----  
HELP/WELFARE N2ILE  
HISTORIAN -----

HOSPITALITY N2AIV  
LEGISLATION -----  
MEMBERSHIP WB2GSF  
NETS WA2TOP  
PUBLICITY -----  
REPEATERS WA2TML  
SITE KB2GTI  
SCHOLARSHIPS -----  
SPECIAL EVENTS -----  
SUNSHINE KB2EUA  
TECHNICAL -----  
TRAINING/TESTING WA2VQG  
WAYS/MEANS N2FNF

### CLUB REPEATERS

147.78/18 MHZ. 224.66/223.06 MHZ 442.100/447.100 MHZ. CTCSS 131.8

### CLUB NETS

ARES/RACES ... EVERY SUNDAY AT 2000 HRS. ON THE 147.78/18 AND 224.66/223.06 RPTS.  
10 METERS ... EVERY TUESDAY AT 2100 HRS. ON 28.350 MHZ

MEETING MINUTES

The First Asteroid

THE MONTHLY MEETING OF THE GCARC WAS HELD ON 12-05-90 AT VFW POST 2117 IN WOODBURY HEIGHTS, NJ. THE MEETING WAS CALLED TO ORDER AT 2000 HOURS BY KB2EAL. THE MINUTES OF THE PREVIOUS MEETING WERE READ AND APPROVED. K2JF PRESENTED N2DWR WITH HER DXCC 18017 AND 10 METER DXCC 783. VISITORS: N2LGH, DAN AND IVOL HILL. SUNSHINE SENT A CARD TO N2DRD AND MENTIONED KN2U AND N2DWR'S SON DAVID WAS IN HOSPITAL FOR SHORT TIME. KB2GTV THANKED N2FJQ FOR PUTTING THE TAPE ON WATER PIPE. WB2DXB SAID THAT SANTA IS READY FOR PROJECT SANTA. TRAINING: THERE ARE 12 GRADUATES OF THE LATEST NOVICE CLASS AT BELLMAWR READY TO TAKE THE NOVICE EXAM. KA2DOT IS RESIGNING JANUARY 1, 1991 AS FIELD DAY CHAIRMAN. PROGRAMS: BUS TRIP FOR FEBRUARY TO CASINO'S. K2JF SAID THAT N2FJQ IS STILL ABLE TO CHECK QSL CARDS FOR WAS. MEETING ADJOURNED AT 2050 HOURS.

RESULTS OF ELECTION FOR 1991 OFFICERS:

PRESIDENT	FR. NORM CONNELLY	WA2BMQ
VICE PRESIDENT	MARLA BOZARTH	N2DWR
RECORDING SECRETARY	MARY ELLEN WELLS	N2KLD
CORRESPONDING SEC.	RICHARD GRAVES	N2ITX
TREASURER	CHARLES COLABRESE	WA2TML
DIRECTOR	KEN BOZARTH	KN2U
DIRECTOR	IRMA COLABRESE	N2FNF
TRUSTEE	MILT MARDER	WA2FGA

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We wish to thank friends and club members for their thoughtfulness during our time of need, especially Father Norm, who was there from the beginning, when we first learned of our daughter Petie's critical condition, through to the end when he concelebrated her funeral Mass.

At a time like this, words prove inadequate, but he has our heartfelt thanks. Nothing more can be said.

Sincerely,  
The Jack Zaruba family.

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Club member Chris West, N7NUA, (TSgt. Christine M. West USAF), daughter of Jack, K2ZA and sister of John, AA2BN, while home on emergency leave, was recalled to her unit for deployment to Saudi Arabia on or about December 27.

The nineteenth century began with an astronomical bang: the discovery of an apparent planet between the orbits of Mars and Jupiter. However, the "planet," discovered on January 1, 1801, wasn't really a planet at all. Instead, it was the largest example of a new class of object - an asteroid. The new-found object was later named Ceres.

Giuseppe Piazzi, a Sicilian priest and astronomer, discovered Ceres accidentally while mapping a section of the sky. Over a period of several nights Piazzi watched as this new object, which he originally believed to be a comet, moved steadily against the background of stars. When it reversed directions, as all planets do periodically, it seemed that the astronomer had found a "missing planet."

Thanks to a simple mathematical relationship called Bode's Law, astronomers of the day believed that a planet must exist in the wide gap between the orbits of Mars and Jupiter. Until Piazzi's discovery, no one could find it.

Piazzi became ill shortly after discovering the mysterious object. And by the time word of his findings reached other astronomers, Ceres had moved too near the Sun for anyone to observe it.

Meanwhile, a young German mathematician, Karl Friedrich Gauss, used Piazzi's observations to calculate the object's orbit. Gauss correctly predicted when and where the object would reemerge from the Sun's glare, and the "planet" was rediscovered on December 31. It was later named Ceres after the Roman goddess of agriculture. And there, Piazzi and other astronomers thought, the story would end. It did not. In March 1802 a second body was discovered in an orbit similar to Ceres'. Thousands of others have been found since.

The Planets This Month

Mercury visible in morning twilight. Venus sets at 6 p.m. Mars sets at 3 a.m., crosses meridian at 8 p.m. Jupiter visible all night. Saturn not visible.

Jan 10th U.S. Army Signal Corps makes first radar contact with Moon 1946.

Jan 24th Voyager 2 flies past Uranus 1986

Jan 27th Fire on launch pad kills Apollo 12 crew 1967

Jan 28th Space shuttle Challenger explodes, killing crew 1986

Jan 31 Explorer 1 launched, first orbiting American spacecraft 1958

Tnx K2JF

DX NEWS

XQOX SAM FELIX NOW ! can be found on 28493 QSX up 5-20.

KD7P/NH7 KURE ISLAND NOW 28945 qsx up 5-10.0

JD1BFQ/JD1 MINAMI TORISHIMA look for him 28470 about 2130Z.

JH1MAO/JD1 " " look for him 28472 at 2130Z (ask Marla N2DWR).

AH0F MARIANA ISLANDS will be active from Jan 2-7 all bands.

JV0DX MONGOLIA 14016 at 0530Z/ 14024 QSX up 5-20 0600Z.

ZF2...CAYMAN ISLANDS by Italy operators Jan 1 - 8th

9M8 EAST MALAYASIA ON 160 METERS JAN 25-27.

5V7AK TOGO till Jan 11 especially cw.  
YA0RR AFGHANISTAN by Romeo UB5JRR/3W3RR will be there  
sometime in January. This is a very rare one and it is hoped  
that another one; Jackie F2CW working with the French Red  
Cross will also be given a license.

Good DXing, K2JF

#### CONTESTS

- JANUARY 1 S.K.N 0000 Z (24 hrs)
- \* 5 ARRL RTTY (1800Z) 30 HRS.
  - \* 19 ARRL VHF SS (1900Z) 33 HRS.
  - \* 26-27 CQ WW 160M CW CONTEST
  - \* 26 - FEB 3 NOVICE ROUNDUP

Try them out and have some fun.

Hope you all had a very merry Christmas and got lots of "goodies".

TNX JOHN, K2JF

#### BANQUET

Last call if you plan on attending the GCARC banquet !

The reservation deadline is Wednesday, January 2, 1991 (The date of the January club meeting). For reservations call Banquet Committee chairpersons Roslyn or Virginia They will be collecting money at the meeting.

#### MENU

BONELESS BREAST OF CHICKEN - ITALIAN STYLE  
SEAFOOD NEWBURG  
BAKED RIGATONI  
CARVED TOP ROUND OF BEEF  
SIRLOIN TIP OF BEEF  
BROCCOLI, AU GRATIN POTATOES  
SALADS, ROLLS, DESERTS

The banquet will be on Saturday, January 12, 1991 at the Dutch Inn located at Rt. 295 and Harmony Rd. in Gibbstown. It will consist of a buffet dinner at \$17.86 per person, a cash bar, door prizes, awards and the installation of officers for 1991. Cocktails at 6:30, dinner at 7:30. Don't miss out on this great club event !

TNX BANQUET COMMITTEE

**Dues are now payable !**

**As of January 1, 1991; Club membership dues are due. They must be paid on or before March 31, 1991.**

See Chuck, WA2TML, Club treasurer.

#### Velocity of Propagation and Antenna Length

I have been asked at various times if I could tell someone where the formula  $L = 468/f$  (where f is frequency in megahertz) comes from. For those who are interested here is an explanation gathered from various sources.

a. In free space, electromagnetic waves travel at a constant velocity of 300,000 kilometers or 186,000 miles per second. The r-f energy on an antenna, however, moves at a velocity considerably less than that of the radiated energy in free space because the antenna has a dielectric constant greater than that of free space. Since the dielectric constant of free space (air or vacuum) is approximately 1, a dielectric constant greater than 1 retards electromagnetic-wave travel.

b. Because of the difference in velocity between the wave in free space and the wave on the antenna, the physical length of the antenna no longer corresponds to its electrical length. The antenna is a half-wavelength electrically, but somewhat shorter than this physically. This is shown in the formula for the velocity of electromagnetic waves:

$$V = f \times \lambda$$

where V is the velocity, f is the frequency, and lambda is the wavelength. Since the frequency of the wave remains constant, a decrease in the velocity results in a decrease in the wavelength. Therefore, the wave traveling in an antenna has a shorter wavelength than the same wave traveling in free space, and the physical length of the antenna can be shorter.

c. The actual difference between the physical length and the electrical length of the antenna depends on several factors. A thin wire antenna, for example, has less effect on wave velocity than an antenna with a large cross section. As the circumference of the antenna increases, the wave velocity is lowered as compared with its free-space velocity.

d. Other factors are involved that lower wave velocity on the antenna. Stray capacitance, for example, increases the dielectric constant and lowers wave velocity. This capacitance can be caused by the line connecting the antenna to the transmitter, the insulators used to give physical support to the antenna, or nearby objects made of metallic or dielectric materials. This change in velocity resulting from stray capacitance is called end effect because the ends of the antenna are made farther apart electrically than they are physically. End effect is counteracted by making the physical length about 5 percent shorter than the electrical length, as expressed in the formula:

$$L = 0.095(492/f) = 468/f$$

where L is the physical length in feet and f is the frequency in megahertz. This formula is accurate for all practical purposes in determining the physical length of an antenna 1 half-wave-length at the operating frequency. It is operational up to 30 MHz. Above this frequency a more accurate formula should be considered.

e. The capacitive end effect also changes slightly the standing waves of voltage and current. When the standing waves are measured, it is found that the nodes have some value and do not reach zero, because some current is necessary to charge the stray capacitance. Hence if you find you can not always get a ZERO or 1:1 VSWR (although you make get very close) it is this stray capacitance that gives you that effect. I hope that this explanation of the above formula will help you.

TNX, John, K2JF

At last month's meeting I turned in my resignation, effective January 1, as the club's Field Day Chairman. After four annual Field Day events, one of which was the very first one at the site, I felt it was time to turn the reins over to someone else. Over the last year and a half, or so, I have seen quite a few new members join our club and these people have ideas and enthusiasm that is the driving force behind any dynamic organization. So I think it is time to harness some of those ideas and enthusiasm into Field Day operations and the best way to do that is to step down and let someone else take over. As a matter of fact, I have a member who has expressed a strong interest and I will be talking to them further on it. In closing, I want to thank everyone who have worked so hard in putting these events together each year. Most people don't realize how much is involved with our Field Day, until they get directly involved. Those that got directly involved right along with me are the ones I appreciate the most as they were as reliable as a leader could hope for. Rather than list as many of the people as I can remember, and leave out someone by accident, I'll just say thanks to all of you for jobs very well done. I could never have done it without all of you.

See you at the meeting - ART - KA2DOT

QSL INFORMATION AVAILABLE

IF ANYONE NEEDS SOME HELP OBTAINING A QSL ADDRESS OR ROUTING SEE JOHN, K2JF. HE NOW HAS THE 1991 CALLBOOKS. HE ALSO HANDLES THE W6GO/K6HHO DX LISTING.

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CODELESS IS HERE !

ARRL BULLETIN 54 ARLB054  
FROM ARRL HEADQUARTERS  
NEWINGTON CT DECEMBER 13, 1990  
TO ALL RADIO AMATEURS

FCC announced on December 13 that new Technician Class license applicants will not have to demonstrate Morse code proficiency in order to have all privileges above 30 MHz. Implementation is expected by February, 1991. Techs who obtain their licenses prior to that date will be grandfathered, meaning they will continue to have their present HF privileges.

The codeless Technician written exam will have 55 questions. New Technicians wanting HF privileges will be require to hold a CSCE for element 1A, that is 5 WPM, which must be administered by three accredited VEs. There will be no call sign designator to indicate whether or not a Technician has passed a code test, but FCC will have records of who has passed. More details will be forthcoming in February QST.....

LOOKS LIKE WE MAY NEED MORE REPEATERS ! 73 JOHN K2JF

HR AMSAT NEWS SERVICE BULLETIN 342.01 FROM AMSAT HQ  
SILVER SPRING, MD DECEMBER 8, 1990  
TO ALL RADIO AMATEURS BT

SAREX Operations Generally Successful

Starting off with a smooth launch and a "nominal trajectory," STS-35 lifted off in a spectacular night time launch with two gigantic white pillars of fire trailing behind. Aboard the shuttle Columbia was Ron Parise (WA4SIR) and the Shuttle Amateur Radio Experiment (SAREX). The SAREX consists, on this mission, of a packet radio ROBOT TNC-2 and a 5 watt FM transceiver. Operating only during his work shift, over a 1000 contacts have been logged. During his "spare" time, Ron answers questions posed by inquisitive school children. Thanks to the efforts of relay stations in Australia (VK5AGR, VK2AS, and VK6IU) and in Brazil (PY2BYO), school children from over forty schools got to hear Ron tackle some very difficult questions about space science and spaceflight. Rich Ensign (N8IWJ), an astronomy and science teacher in the Detroit area who has been monitoring these sessions is impressed with the questions that have been asked of Ron.

Reports from all over the world have been pouring in about the successful "connects" packet stations have made with WA4SIR. One factor which made communicating to WA4SIR difficult, if not impossible, has been Columbia's attitude. Because the ASTRO-1 experiments have required shuttle attitude adjustments, the window-mounted antenna on the pilot's side, i.e., on the right side above the centerline, has not always been earth-pointing. N3FKV notes that when the antenna is pointed away from Earth, as it has been on several occasions, signals have completely disappeared. However despite this problem, when all the QSO's are counted, it will be seen that the SAREX packet ROBOT station was a major success.

One of the final milestones yet to be achieved is a QSO between U2MIR and WA4SIR before Columbia returns on December 10. There was a very close approach between Mir and Columbia this week, so close in fact that they were only a few dozen miles apart. In what was a coincidence, Musa Manarov (U2MIR), the most active of the amateur radio operators ever to have flown aboard MIR, has been returned to the space station this week. It is hoped that toward the end of the mission of STS-35 the first QSO ever between "space mobiles" will take place.

For those who have made a packet contact with WA4SIR and would like to receive a QSL card, please send your QSL card, QSO number, and an S.A.S.E. to ARRL Headquarters.

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.....OUR DEEPEST SYMPATHY TO JACK, BETTY AND JOHN ZARUBA ON THE RECENT PASSING OF THEIR DAUGHTER AND SISTER, PETIE.....GET WELL WISHES TO KB2EUA, MIRIAM KRAVITZ, SHE WAS HOSPITALIZED AFTER AN UNFORTUNATE ACCIDENT BUT NOW SHE IS RECOVERING AT HOME, DOING ALOT BETTER.....GET WELL TO KE2WC, MARK MASTROGIACOMO, HE WAS INVOLVED IN A CAR ACCIDENT BUT IS HOME FEELING VERY SORE AND BANGED UP.....HAPPY BIRTHDAYS THIS MONTH TO WA2GFK, JOE DINOVI; WB2YHX, SID BOZARTH; KB2COB, BOB LAYTON; AND KB2AYU, AL ARRISON.....

TNX N2DWR